

The Chronicle of the EARLY AMERICAN INDUSTRIES ASSOCIATION

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Early American Manufacture of Felt Hats

BY WILLIAM B. SPRAGUE

(Author's Note. This article does not purport, by any means, to be the "last word" on the subject. No pains have been spared to achieve accuracy, but the author will welcome criticism and suggestions and, if conditions warrant, will make them the subject of a supplementary treatise. At the end of the article will be found a list of the books and individuals consulted on the subject (of which the first eight undertake to describe the process of hat-making in some detail) and, inasmuch as the article is intended more for reference purposes than for entertainment, the text has been broken up with direct references to this list, giving, in the case of a book, the page number as well. It is hoped that this will not be too annoying to the casual reader. Where reference is made to an "illustration" by numeral, the numeral corresponds to that placed against the picture of the particular tool under discussion, as it appears in one of the group photographs and in the group of pen sketches which will appear with a subsequent instalment of this article.)

Felt hats were made in England as early as the late 16th century (C3) and perhaps a hundred years before that (K1071). In 1662, the colonial government of Virginia offered a premium of ten pounds of tobacco, the currency of that time, for every good hat made in the colony, of wool or fur, and in 1672,

granted "when they should make as good hats, and sell them as cheap as those from other parts" (L777-8). Over ten thousand beaver hats were produced in New England and New York in the year 1731 (Q16, R67). In Danbury, Connecticut, which is now the great hat-making centre, the pio-



"Bowing Room"
from Knights Cyclopedia (Z)

several Massachusetts hatters petitioned the General Court for the exclusive privilege of manufacturing hats to be used in the colony, but were told that their application would be

Our Purpose

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men and other workers.

Dues

The annual dues shall be one dollar, payable September first, for the year immediately ensuing.

The Chronicle is sent to all members without additional charge.

neer of the industry was one Zadoc Benedict, who began manufacturing about 1780, but by 1808 he had more than fifty competitors, each employing from three to five workmen (M10). As late as 1832, almost every community had its hat shop comparable to the blacksmith's and shoemaker's shops (N14). The inventing of hat-making machinery began about 1799 (L780) and one finds illustrations of many machines supposed to have been perfected in the 1840s (G642), but the real transition from handwork to factory production took place about 1850

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Almost Gold Mines!

BY S. E. GAGE

In 1906, we bought two old Connecticut houses and accompanying barns and outbuildings, and in these were found many tools and appliances, the like of which I had never seen.

There was a contrivance which looked like a carpet beater, but had a piece of hard wood about two inches long and fastened by a wooden pin which allowed it to revolve. Mr. Wm. Marsh said that he could remember when the sky would be darkened by great flocks of passenger pigeons. The natives would bend down some saplings around a small cleared space and hold them down by a net. In the centre would be placed the above contrivance, a pigeon stool to which the stool pigeon had been tied. The stool was on a teeter so that by pulling a cord the stool pigeon would be moved up and down, causing him to spread his wings and try to fly. The space would then be baited with corn. When the wild pigeons came down the net trap would be sprung and the captured birds beaten to death and put down in salt for winter eating. I afterwards secured the net originally used on our place. The last passenger pigeon is now dead.

The men were reshingling the roof of north wing and one said, "There is a lot of stuff in the loft under here. Take a look."

Sure enough, but how to get into this roof space. We found the ceiling in a small hallway to be higher than that in the adjoining room, while over the door from the hall to the room was what appeared to be a fanlight ventilator, but no, it opened into the loft and this on being explored with an electric lantern, proved to contain a loom, complete, but in a knocked down state. This measured 5 feet 8 inches high by 5 feet wide by 8 feet 6 inches long with oak corners and other large timbers. We got it out and set it up again after much puzzling.

Another loft opened off the back stairs through a mysterious door high in the wall. This had apparently been forgotten, for it was a mine. Maple cord beds, boxes of gin bottles—all sorts of things.

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The Chronicle

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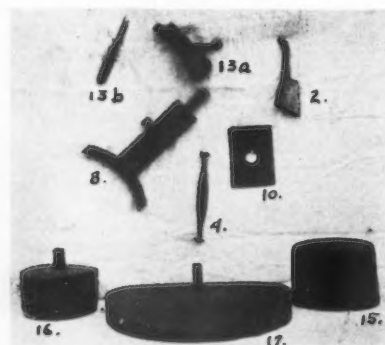
(N26), when a felting machine was developed to do the work of the bow, as hereafter explained (N34, ill. O, S, L782). This machine consisted mainly of a perforated revolving cone, with a device for sucking the particles of fur upon it—an American invention, not introduced into England until about 1858 (P60).

Before explaining the various operations by which felt hats—or “stuff hats,” as they were often called



Hatter's Irons

(A171)—were made by hand, it is necessary that the reader should understand the peculiar properties of fur and wool and the processes necessary to convert them into felt. Fur and wool fibres “have barbed surfaces inclined from the root towards their tips” (K833), are “notched or jagged at the edges, teeth pointing toward the root” (C2), are “covered with little scales or beards which admit of motion in one direction but retard it in another” (H53). Under the influence of heat, moisture, friction, and pressure, “these barbs spread out from the main fiber and, like the tendrils of a plant, catch hold of other fibers and cling to them. When a mass of such fibers are disposed in all directions, they readily interlock and

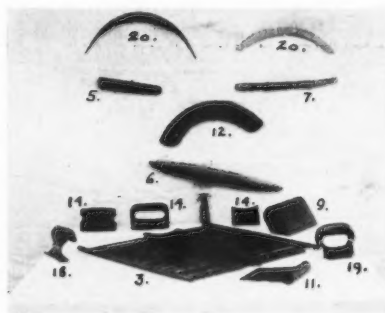


Hatter's Tools

consolidate into a compact fabric” (K833). There is a legend that the process of felting was accidentally discovered by St. Clement, who, having put some rabbit's fur in his shoes to

protect his feet during a long journey, found at its conclusion that the fur had become compacted into a homogeneous mass (K1071) and hence he was adopted by the hatters' trade as their patron saint (P60, C3). The fur used was, variously, beaver—although, as early as 1827 this had become sufficiently scarce and valuable to be used only for *facing* (B109)—rabbit, muskrat, otter, seal, (H52) and nutria or neustria, a South American animal resembling an otter (J994, C3), sheep, goat and camel (B109, H52), and often the wool was mixed with the fur. The “faced” hats were sometimes called “plate hats” (C4). Of course, cheap hats were pure wool (H52).

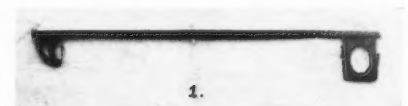
The first step in manufacture was, naturally, to remove the fur from the skin. Practically all fur has, interspersed among its fibres, long, coarse, unbarked hairs which not only do not contribute to, but actually hamper, the felting process. These were pulled out with a coarse knife (C3) resembling a shoemaker's knife (H52, B109) and thrown away, the hairs being pinched between the thumb and the knife, and the skin being held fast to the knee by



Hatter's Tools

means of a strap passing under the foot, this operation being known as *pulling* or *forcing* (C3). The fur proper was then cut off with a smaller knife “of circular form such as used by harness-makers in cutting leather” (H52) “nearly in the form of a pruning knife” (B109). Neither of these knives have been found and identified, and hence are not illustrated. One modern writer says that they “cut the fur from the pelts with long-handled shears and with their fingers separated the fur from the hair” (M11) but I have not found his authority for this statement. A machine for cutting the fur from the skin was invented and to some extent used by about 1830 (S), and before 1852 the fur was sometimes sorted by being “blown through a horizontal trunk, the heavier filaments falling first” (C3, D241).

The loose fur was then ready for the bower. He worked in a “low, unventilated apartment, where every precaution is adopted to keep the air stagnant, that none of the precious material be wafted away and lost” (C4). His bench was called a *hurdle* (A165, B110) or *hurl* (H52). This was a long platform of wood or wire, fixed against the wall, and divided by side partitions into spaces about four or five feet square (B110, A165) called *bundles* (E270), each of which was lighted by a small window, which could not be opened (C4). The wooden hurdles were made of deal boards, about three inches



Bow

wide, with cracks between (A165) to allow dust and other impurities to sift through (B110, P60). His tools were the *bow*, the *bow-pin*, and the *basket*. The bow—or *stang* (P60)—was a pole of “yellow deal or ash,” about seven feet long, with “bridges” at the ends similar to a violin bow, strung with “catgut” about one twelfth of an inch thick (A165, B110, D240) which actually consisted of from four to twelve strands of sheep's intestines (G278). See illustration (1). A band of leather was stretched tightly around the edge of each bridge and its ends tied to the pole, as indicated by the letters AA in the sketch, to be published later. The purpose of this is not readily apparent. One writer states that a larger bow was used for wool than for fur (K1071) and certainly that shown in the picture from Hazen's “Trades,” reproduced herewith, is not the same type as those in the other illustrations. The bow was

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“Hatter”
from Hazen's “Trades” (H)

Early American Industries Association

A Southern Wheelwright Shop of the Early 19th Century

By STEPHEN C. WOLCOTT

To be truthful, it is necessary to date our shop as above, but I do not like to use the expression 19th Century, it sounds too recent. To say about 1800, or even 1820, seems much further away. It is back to that period I wish to take you, and into a shop, some twenty by forty feet, still standing in good condition for all its age, this due to its heavy beams and rafters hewed from the great oak, gum or walnut trees, with the so-called *turkey wing broadaxe*; its heavy weather boards cut from the heart of virgin growth pine by the *tiller type of pit saw*¹, and fastened with hand-wrought nails or, in places, with wooden pegs; its cypress shingles, called here slabs or shakes, riven with the *shingle frow*² and from *chib*³ from blocks that had seasoned to just that proper condition for splitting to the best advantage; its brick chimney and large fireplace made of home-made bricks, the mortar made of that same oyster shell lime that has defied the weather for many years in all of our outside chimneys in the South. When first built our shop had shutters only, as the sash were to come later when the door and sash *clamps* and other tools had been made; these will also be used in making doors and windows for new neighbors.

Now that we have the shop closed in, let us consider what has been referred to—the making of clamps and tools. After the Revolutionary War, and especially between the years 1790 and 1810, the young people, having learned a trade, were pushing into new country. As with their fathers before, who also started with the wilderness, they had only such tools and implements as they had made at home, or could be spared from the home farm or shop. This necessitated making most of the tools needed. The tools usually deemed necessary by a wheelwright and taken on the adventure were an *axe*, a *broad-axe*⁴, a *broadaxe*⁵, a *tiller type of pitsaw*¹, a *frow*², a few *frame saw* blades, both narrow, with small teeth⁷ for circular work such as felloes would require, and wide, with large teeth⁸ for ripping out boards, shafts, tongues, etc., a *hammer*⁹, a *chisel*¹⁰ or two, an *anvil*¹¹, a *bellows*¹² and *tuyere*¹³ or tire iron and a few *planes*¹⁴ or at least some plane irons, also some bars and rounds of iron.

The first work will be to make up his benches, build his forge and set his anvil to be in shape to make up other tools and take on such work as he can do with his limited equipment. Before

describing the tools he will use in his wheelwright work, and those we describe will be only the large and noticeable ones that are essentially shop tools, let us consider his position in the community of which he is to be so useful a member.

As has been said, he must be a blacksmith to properly complete his wheelwright work. Besides these two trades, he was always the local undertaker and made coffins as occasion required and to fit. (Throughout the South one finds this is still the case, or, if the old shop has been given up, the undertaker, and now the embalmer as well, has persisted.) One of the first pieces of work ordered will, no doubt, be some kind of a farm implement, a plow, harrow, wheelbarrow, cradles for grain, forks, rakes and handles for all farm implements and tools. Repairs to all of these, as to all kinds of household furniture and utensils, as well as making most of the simpler kinds, not excepting the high and low post beds and later the spool beds. He also helped out the local carpenter by making window sash and paneled doors. Owing to the few regular gunsmiths at that time, he took on this job, doing some excellent work, as I have seen, and from local report often being the best shot in the district. With his *lathe* he turned out bed posts, fence posts and post finials, wooden pump tops and spouts, butter moulds, potato mashers, wooden pestles, table legs, chair legs, spindles and braces, and for the children tops and other toys.

Now that we have him sympathetic to both young and old, to housewife, farmer, carpenter and hunter, a man ready to smoke a pipe or tell a tale with any, maybe we can get him down to making the balance of his tools.

Such diversified work as his required a variety of tools, although at present we are interested only in the large ones used in the making of wheels. The first requirement would be three benches; a regular *carpenter's bench*¹⁵, some two feet wide by ten feet long, with its bench screw or vise at the left end, with its top level with the top of the bench; a sliding panel under the front edge with peg holes and a peg for holding up the free end of a board clamped in the vise, an inch hole in top of the bench some six inches back of the vise for the *bench stop*¹⁶, and four or five inch holes scattered about the top for the *holdfast*¹⁷.

(Continued in next issue with illustrations of most of the tools mentioned)

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Another most interesting lot of stuff was found in the old shop.

A primitive turning lathe with wooden balance wheel and the crudest working parts, but all in good order. All the tubs and spiles for maple sugar making. A number of interesting bottles, beehives and their accessories.

In a shed was the old shingle bench almost complete.

In the cottage woodshed loft was a cheese press. In our house we had found a beautifully made split hickory basket about 2½ feet in diameter and in perfect condition.

There were also several cheese rings and other parts. That started the quest for cheese presses. It is interesting to see how many ways power was applied to the presses. There proved to be ten or a dozen methods in my presses. Most of the presses are minus the rectangular box. When the press was discarded, the box was almost invariably used to plant flowers in. Whey tubs are larger than washtubs and are very scarce. I was glad to get one from my farmer's father who was nearly 100 years old.

The barns proved to be interesting hunting ground. A yoke for a single ox was unearthed and a roller used in planting tobacco. It had a knob protuberance. When the roller was pushed where the young plants were to be set, this knob would make a depression to mark where the next plant should go.



"Points" of Interest

The Bank of Manhattan and Trust Company, one of the very largest of the New York banks, grew out of the Manhattan Company, which was organized by Aaron Burr, in 1799, to supply water to the citizens and up to about 1823 used wooden pipes for this purpose.

Earle T. Goodnow writes that in going over a number of invoices over a hundred years old, he finds that wholesale stores of the time listed many articles such as spike-gimlets, brad-awls, files, jack-planes, frows, hammers, iron squares, gauges, chisels, etc., that must have been made in factories. The "Inventory of a Country Store of 1675" also lists these articles. We usually think of these things as being hand-made. What is the answer?

Have you ever heard of the Rolling Road? From York, Pa., through Baltimore to Elkridge, Md., runs a road called years ago, The Rolling Road. The reason was that the tobacco

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The Chronicle

Industrial Museums

Those who have consulted the Handbook of American Museums and studied the 1400 entries were no doubt impressed with the interest taken in these institutions and still more so with the small number devoted primarily to industrial subjects. Considering the predominant importance of industry as contrasted with commerce and the professions and the entertaining character of industrial exhibits, it appears that the field has been neglected and undernoted. Outside the museums located at Doylestown, Dearborn, Chicago, the Franklin Institute of Philadelphia and the Smithsonian Institute at Washington, there are very few of this character of any considerable size. However, among these may be classed the industrial collections of the Landis Valley Museum of over one hundred thousand pieces, from pins to Conestoga Wagons in size.

This museum is located on the Old Reading Road, four miles north of Lancaster, Pa., in Lancaster County, the home of the "Pennsylvania Dutch," and the center of their unique culture. Two bachelor brothers on retiring from business took up this work as being one of those things which should be done, and with the end only in view of preserving examples of the handiwork, ingenuity, and craftsmanship of past generations. Also to illustrate the methods, devices, apparatus and tools of the days when America was in the forming.

It is only the frugal and provident character of the people that has preserved the few pieces now available. Times are changing, attics and lofts are cleaned out as the older type of people pass away. Again our examples and antiques which could be obtained readily a generation ago, are today hard to find and not easy to buy.

The owners, George D. Landis and Henry K. Landis, devote all their time to procuring and preparing these specimens at their own expense, for the museum receives no outside assistance and not many donations. Anything that represents some feature of early life, custom, or industry finds, a place in one of the five buildings.

A final word might properly be said as to the necessity for getting together and preserving these reminders of bygone days in this country. They are as "ships that pass in the night" and leave no sign of their past achievements. Let us not forget that the wealth of this country was built up by these ancestors. If they were close-fisted old fogies we are prodigal spendthrifts, but nothing results from calling names.

Let us study the things which made this country great, the wisdom and technique, devices and methods, courage and prudence of those old folk in the light of their day and industrial development by gathering and preserving the products of their craftsmanship and ingenuity in museums so that they may become available to students of coming generations.

Editors' Note. This museum is opened to all, free of charge. In fact, a visitor is urged to make himself at home and to come again. The Landis Brothers especially welcome those who come to make a study of any part of their splendid collection.

We understand from Mr. H. K. Landis that we may look forward to articles dealing with special industries or apparatus. We shall hope to include photographs of interesting tools or implements with these articles.



Ancient Tools in Modern Teaching

By HANNAH S. DODGE

Director of the Slater Memorial Museum, Norwich, Conn.

The forming of an association for preserving and demonstrating the use of industrial tools used in America before mechanical processes would seem to come at an interesting moment in connection with the teaching of American history. History textbooks have ceased to be a record of battles accompanied by dates. Periods are reconstructed with the details of living conditions carefully studied.

The value of visual education has been demonstrated. Museums swarm with classes in search of background material. In the Loan Exhibition departments, requests for material to illustrate social subjects are frequent, and Museums of Industry and the Peaceful Arts become at once popular.

The early tools offer a particularly important link, as they reflect the personality of the people who made and used them much more clearly than could any of the implements since. The man who uses a mechanical or machine-made tool could never be revealed by them as can the man who used the hand-made ones, each of which is individual.

The present Connecticut legislature has made history a required subject. In a letter sent to superintendents and school officials last April, the state board of education referred to this ruling in connection with the preparations for the celebration of the Tercentenary of the state; they said "Though we have two school years for preparation, it will not be found any too much time in which to obtain correct information and source material. We hope to avoid some of the strange anachronisms observed in period projects relating to costumes, customs, architecture, and domestic utensils."

A great reform has taken place in teaching concerning the American In-

dian. Five or six years ago teachers would ask for loan material about the Indians, and when urged to be more specific, it was not unusual for them to say that pictures and objects from any part of the country would do. The efforts of students of Indian arts and crafts have gradually made themselves felt, and the wealth of information that has been contributed has enabled teachers to know the materials and processes used by the Indians in making pottery and baskets so well that their classes have experimented with these same processes. Our museum was a logical one to join this movement as we have the largest collection of Connecticut stone tools on record, so we borrowed sufficient material to arrange, for temporary exhibition, an extensive show illustrating the four great Indian cultures of North America, and had quite an overwhelming response from our local schools.

I wish that it were possible for us to acquire as good a collection of the tools of the colonists as we have now of those of the Indians. It would be the answer to many requests that come to us each year. A few unrelated tools are of course much less valuable, although even that would help to bring the period to life, but a really important collection would tell the story so clearly that the child could see the weaver or basket maker or shoemaker going through the stages of the completed product.

If this is to be done by museums, it must be done quickly, for every year finds more of these highly illustrative objects scrapped by someone who is clearing out an old farmhouse or barn, and sees no value in an odd shaped bit of wood or metal. Soon the chance to make these collections will be gone, and with it a chapter in American history.

Early American Industries Association

Early American Industries Associations

W. B. Sprague, Chairman
E. T. Goodnow, Treasurer
S. C. Wolcott, Secretary

W. B. Sprague, Chairman,
Executive Committee
S. E. Gage, Chairman,
Admissions Committee
S. C. Wolcott, Chairman,
Publications Committee
A. E. Lownes, Chairman,
Recruiting Committee

Communications should be addressed as follows: Pertaining to this bulletin, S. C. Wolcott, Nuttall, Virginia. Candidates proposed for membership, to S. E. Gage, 144-54 Sanford Ave., Flushing, New York. Suggestions for prospective members, to Albert E. Lownes, P. O. Box 1531, Providence, R. I.

"The Chronicle" has been made possible through the liberality of A. B. Wells, Southbridge, Mass.

S. C. Wolcott, Nuttall, Va., Editor

Editorial

With this issue we are offering to our members such a *Chronicle* as we had in mind when the thought of one was first conceived. We are still behind our goal. After all, it should be remembered that we are not the arbiters of its make-up and success, but you, as its readers. We wish to give you what you want. Our own thought is to make it a source of little known information and facts, an authority, if you will, on the industries of the early American workers of all trades, arts, and crafts.

Consciously or not, if the following thoughts are true, we as an association are treading in the shadows of real men.

A reply to the question of what is your definition of Man was, "Man is an animal capable of making and using tools."

Overstreet in his "Psychology for Normal People" amplifies this definition: "The advance of civilization has meant the gradual extension of fact thinking. The invention of the first tool was the initial triumph of such thinking. A tool cannot be dreamed or prayed or wished into existence. The tool maker had to grapple with the tough conditions of reality. He had to

Frankly It's an Experiment

In this issue we have tried to demonstrate just how useful and valuable a publication *The Chronicle* may be, if we have the full support of our members. These first two numbers were wholly paid for by a very few of our members, but we cannot count on their generosity for future issues. If we are to continue, each of our members must help.

In spite of the fact that it had to bear a heavy freight of routine business, the first number of *The Chronicle* was well received—even by persons who have no particular interest in our association. (Some of the reviews are quoted in another column.)

Your officers are anxious to continue the good work. For \$750, we can issue a number like this one each month until our annual meeting in September—nine issues in all this year. We want to do this, or to come as close to it as possible, so that when the meeting is held, we shall have had enough experience to guide our future policy. So we appeal to you.

There are four ways in which you can help:

1. By sending as large a check as you can to the Treasurer.
2. By persuading desirable persons to become members. Proposal blanks are enclosed with the magazine. Additional blanks can be secured from Mr. Gage, but proposals may be made by letter, giving the same information as that called for by the blank.
3. By taking advertising space, if you are a dealer. The by-laws prohibit any direct appeal to members by a dealer. Tentative rates are quoted in another column.
4. By contributing articles, notes, questions, etc., to broaden the interest of the paper.

The association's officers are giving liberally of their time and thought and money, but they cannot carry the whole burden. They have outlined their hopes and expectations. The accomplishment is up to you. With your help, we can make *The Chronicle* the recognized authority in its field.

PLEASE DO YOUR PART NOW!

meet them with honesty and efficiency. He could neither evade them nor fabricate them. It is for this reason that tool making, all through the ages, the molding of matter in usable shape, has been one of the most effective means whereby man has disciplined himself into straight and honest thinking."

Know Your Tools. It is a lot of fun to own some "contraption" of mysterious appearance, which puzzles you and all your friends as to its possible use, but it is a lot more satisfactory to know, and to be able to explain what work it really did, and to call it by its

right name. Use *The Chronicle* for this purpose. We are not infallible; in fact, we all have a lot to learn, but at least we will get further if we "compare notes," than if each of us tries to cover the whole field by himself.

There is, as yet, no one book, or group of books, for the general collector of implements. Mrs. Earle's "Home Life in Colonial Days" is readable, non-technical (except on the subject of weaving) and authoritative so far as it goes, and is perhaps the best reading for one who is just beginning to be interested in early industries. If there is any special subject that you wish to read up on, let the editor know, and, if necessary, he will consult other members who have been accumulating voluminous notes for research purposes, although most of the books recommended will be procurable only at large libraries.

From the complimentary reviews of the first issue of *The Chronicle*, the members may well feel that we are filling an empty space in the magazine world. The Editor wishes to take this opportunity of thanking those who took such kindly notice of us. For the benefit of those members who have not seen such notices, we quote the following from the Antique Section of the *Boston Evening Transcript* of Saturday, December 16, 1933: "Most ambitious literary undertaking of any of the collector's Clubs, *The Chronicle* of the Early American Industries Association reaches us in Number 1, Volume 1, as a four-page, nicely printed news bulletin—its editorial matter carries all the charm of Will Howe and W. A. White. More tangible, it tells in detail the facts about the organization," etc., giving a full list of officers and charter members.

The American Collector, a new magazine, published bi-weekly by Thomas H. Ormsbee, was thoughtful enough to give us a splendid write-up, although its first issue was printed less than two weeks after our issue. We take pleasure in recommending this very attractive, well-printed and illustrated bi-weekly, to anyone interested in American Antiques, or news of the Antique World, and to collectors or dealers. The price is twenty-five cents, or three dollars a year, and can be had from T. H. Ormsbee, 425 Fourth Ave., New York City.

The New York Evening Sun gave us a good send-off by printing much of the minutes of our organization meeting, giving also a list of the officers and members.

Do not hesitate to ask the Editor for his authority for any statement in these columns. It is often omitted to save space.

The Chronicle

Classification of Early American Tools of Certain Trades

By S. C. WOLCOTT

Let us say at once that the purpose of this article is to form a basis for criticisms and suggestions, in the hopes that out of such we may find a classification that will be the answer to our problem.

All of us who are interested in collecting tools or implements have realized the need of some system by which they may be classified. This would be a great help in identifying a tool and possibly in dating it. Also it would assist a collector by indicating what he needed to complete his collection.

To do this properly would necessitate a complete list of all trades, arts, crafts, pursuits, operations, and industries, practiced at the time in question. This, we understand, is being worked out by one of our members and will appear in a later issue of *The Chronicle*.

There is, however, another classification of tools, as such, and not including implements, which has been used in many catalogs and by Dr. Henry C. Mercer in his valuable book, "Ancient Tools." In considering such a classification, we must first establish our basis of classification. It might be according to age, period, or century as Thomas Hibben has done in his most interesting book, "The Carpenters Tool Chest," or we can use Dr. Mercer's basis, the use to which a tool was put, such as cutting, filing, scraping, sawing, and so forth.

For identification, the latter would seem to be the best. To perfect this idea, however, it should be extended to include all the different types of tools of each class; or at least such characteristics of each type as will identify it. To this can be added, in many cases, the period or century in which such tool was used, thus giving its possible age, though very indefinite, it is true.

We can extend this idea to include the locality in which it was most largely used. By using Mr. Hibben's book for reference or extending his illustrations to include a larger number of tools all of the same period, the date of more tools could be determined. This would be true also of the trade by which such a tool was used, that is by including a list of tools of each trade, or by some method indicating the various trades using it.

There are certain trades the tools of which are so peculiar to that trade and which by construction do not lend themselves to this classification that it seems better to class them all under

that trade, such as many cobblers' and saddlers' tools. In trying to identify such tools the only satisfactory way is to compare them to the illustrations of these tools.

We owe a great debt to Dr. H. C. Mercer and Thomas Hibben for their extensive and painstaking investigations, and the delightful and interesting shape in which they have handed them on to us.

The author hopes to hear from any one interested and will welcome suggestions. He has carried out these ideas in an extensive classification of carpenter's, cabinet maker's, cooper's, wheelwright's, millwright's, blacksmith's, farrier's, currier's, cobbler's, saddler's, shipwright's, chairmaker's, gunsmith's, pump-maker's, turner's, and farm and home-made tools. With his collection of over twenty-five hundred tools of these artisans to work with, he is still not entirely satisfied that he has the right arrangement of headings. To afford an opportunity to judge the system as at present outlined the following main headings are given.

It will be noticed that he has utilized as a basis, the use to which a tool was put.

These are the headings of the index of the classification.

CHAPTER I	Shop Tools—This includes all large tools used essentially in a shop, transporting, lifting.
CHAPTER II	Tools for Felling, Hewing, Chopping, Sawing, Splitting, Hitting
CHAPTER III	Tools for Measuring, Marking, Leveling, Squaring, Plumbing, Gauging
CHAPTER IV	Tools for Paring, Shaping, Fitting, Surfacing
CHAPTER V	Tools for Boring, Punching
CHAPTER VI	Tools for Clamping, Holding, Gripping, Prying
CHAPTER VII	Tools for Adjusting, Fastening, Drawing, Pulling
CHAPTER VIII	Tools for Sharpening, Cleaning
CHAPTER IX	Cobbler's Tools. Saddler's and Harness-maker's Tools
CHAPTER X	Age—as this applies only to tools used in America, no effort is made to go back of the 17th Century Tools of the 17th Century Tools of the 18th Century Tools of the 19th Century, up to 1870

The following is a sample page of the above described classification.

Classification of Tools

Sample Page of Index

CHAPTER V

Tools for boring or for punching	Page
1. Braces and bits stocks	67
2. Bits	69
3. Boring Machine	70
4. Drills	70
5. Gimlets	71
6. Awls	72
7. Augers	72
8. Reamers	72
9. Bow drill	73
10. Pump drill	73
11. Countersinks	73
12. Punches	74

Classification of Tools

Sample page of Classifications

GIMLETS

From page 71

Pod
Shell
Shell screw
Twist
Spike { Shell
Twist or auger
Bell—12" to 36" long
Spout
Gutter
Brewers
Coopers { Wine frets
Bung ticklers
Boat builders
Tap borers
Tap borers improved
Gunsmiths
24" to 48" long

It will be realized that a small photograph illustrating each type would be the best possible description.



Continued from page 2

suspended from the ceiling by a cord tied around its middle (E270, C3, M13) so as to hang level just above the hurdle (G supp. 142, D240). The bow-pin has been variously described as a "stick with a knob" (B110, A165), a "small wooden catch" (D240), a "wooden pin with projecting knob" (C4), and by one writer of the times as a pointed stick attached to the bow (E270), but all of those which have been seen by the writer have a bulge in the middle and a knob at either end. See illustration (4). The basket was a "square piece of osier work, with open straight bars, with no crossing or interweaving (A166, B110), also described as a "wicker frame" (D240, C4). It sometimes had a "concave surface, shaped like a fireguard" (C4) and the sides into which the bars were fixed "slightly curved, so that the basket might be set on edge" (A166, B111)—a statement which is not entirely clear to the writer—but at other times it was perfectly flat (H53, M13). See illustration (3).

Continued in next issue

Early American Industries Association

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On going to press, the members of our Association in good standing are as follows: If any name has been omitted, please advise the Treasurer, Mr. Earle T. Goodnow, W. Cummington, Mass. at once:

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Alexander J. Wall, *New York, N. Y.*
R. W. Wetmore, *Minneapolis, Minn.*

If those members who would like to have others know in what they are interested, will send such information to your Editor, he will mention it in an early issue.

An Appeal

We are appealing to every member for articles for *The Chronicle*. We are endeavoring to make our paper of interest to all, but to do so we need your assistance. Let us have a long article on your favorite subject, one we can continue through several issues, or one of a few hundred words, or short squibs of interest. Nearly every one you talk to on your hobby will give you a new thought in which some of us would be interested. Or, give us your reactions, criticisms or suggestions on articles in this issue.

Here are a few suggestions for articles. (If you have half-tones or other cuts, let us have them, if not, then photographs.)

Early American Lighting Fixtures, as Used in Colonial Churches

A List of Utensils Used in the Pioneer Home

We want a list of all tool and implement factories in the United States up to 1820

Early American Farm Implements
How and Where Were Early Lighting Devices Made

Home Weaving About 1800

Old Stagecoaches and Where Built
An Apothecary Shop of the Early 19th Century

Our 18th Century Silversmith's Tools

Unfortunately we are unable to pay for contributions and are asking those who can, to pay for any cuts they wish used with their article. These will cost from a dollar and a half to four dollars, depending on the size.

Continued from page 3, col. 3

raised around York had to be taken to a shipping point. Some clever mind suggested putting a pole through the tobacco hogsheads, fastening a pair of shafts to it, and with the steer or horse in the shafts, the tobacco went rolling to the shipping point at Elkridge on the Pataseco River.

By cleaning metal with the electric wire brush, a burnished finish is given it, that retains its aged color and helps to prevent rust.

A thin coat of anhydrous lanolin on metal will prevent rust.

A very good cleaner and coating for wood and iron is made of vinegar, turpentine and linseed oil in equal parts.

Samp was made in the Southern States by soaking corn in water and then pounding with an iron pestle in a high cone-shaped bowl formed in the top of a block of wood some four feet high by ten inches in diameter.

Although strakes, or sectional iron rims, were used on wheels as late as 1880, solid iron rims were used in Roman times.

Our Stationery

is now on sale to members at 75 cents a hundred sheets, including the same number of envelopes. Send check or 3-cent stamps to Earle T. Goodnow, West Cummington, Mass.

Libraries and Museums

The Baker Library, Soldiers' Field, Cambridge, Mass., has probably the outstanding collection of the country of early business papers.

The Essex Institute of Salem, Mass., has a collection of twenty or more illustrated tool catalogs, published in England from 1804 to 1830.

The Worcester Historical Society has an extensive library on books covering nearly every phase of early American life.

We hope other libraries and museums will send us information on books or collections they have that might interest our readers.

Tools used by Duncan Phyfe, the master cabinet maker, were presented by his sons to the New York Historical Society and are exhibited in its museum at 170 Central Park West, New York City.

U. Waldo Cutler reports that a very interesting meeting of the Rush Light Club was held in the rooms of the Worcester Historical Society, December 9, 1933.

In addition to those appearing on W. B. Sprague's list (which will be sent to members on request) we have learned of the following museums having collections of early American tools or implements.

Bourne Historical Society
Holliston Historical Society
Lexington Historical Society
Medway Historical Society
Plymouth Antiquarian Society
Society for the Preservation of N. E. Antiquities (Boston)

We would be glad to know of others.

The Editor

Advertising

It has been suggested that we should include dealers' advertisements in *The Chronicle*. To that end, we will accept classified advertisements at two cents a word, and space advertisements at fifty cents an inch for the next issue, which we hope to send out about March 1.

REPLIES

In response to Mr. S. E. Gage's inquiry in the last issue as to how the wafers, which were used for sealing letters, etc., were made, another member has referred us to Ure's Dictionary (1850), which states that there were two methods of manufacturing. In one case, a "pap" was made of flour and water, and introduced between two plates of iron, which formed the ends of a pair of tongs, and "baked" over a charcoal fire. In the other case, a solution of glue or isinglass was poured hot upon a sheet of glass with slightly raised edges, and a second sheet of glass laid upon it. In both cases, the thin sheet was formed when cooled, and was then divided into the desired sizes by means of punches. Both kinds were sometimes colored, usually with vermilion, sulphate of indigo, or gamboge.

A member has asked for further information about the Pioneer's Village at Salem, Mass. This village is located in one of Salem's parks within the city, but on the water front. It was put up, and is maintained by the Board of Park Commissioners, City of Salem, Mass. They charge fifteen cents (15c) for a thirteen-page pamphlet, giving a full

description of the various houses and industries, and their construction. It is interesting to note the confirmation that boards were used for the first houses, not logs, as was also the case at Jamestown Island. If others are interested in this Village, we will publish an article on it and, if it is possible to get them, a few photographs.

Mr. E. T. Goodnow refers the member asking the value of saw or plane marks on parts of furniture as indicative of its age, to an article by H. H. Taylor, in the July 1927 number of the magazine *Antiques*. Mr. Goodnow agrees with Mr. Taylor in every detail.

We are still waiting for replies to Nos. 2, 4, 5, 6 and 7 under "Information Wanted" in our first issue. The one asking the question would naturally be interested, but so also would many of our members.

Several members are still looking for books or prints, magazine articles or catalogs of the various trades, crafts and guilds.

DO YOU KNOW?

That many antique dealers report a large demand for early American tools and implements during this past summer.

That we can often get pointers by visiting the historical society rooms one finds in nearly every New England town.

That wooden shoes were made in several of the thirteen original States up to and after 1800. You can still find the tools that were used in their manufacture.

That in Virginia, tobacco served as currency in the 17th century. Many an account with the local storekeeper was settled once a year with tobacco. It is difficult to see how any one traveling carried enough with him to make much of a trip at these prices which were fixed by law.

Meal for master—15 pounds

Meal for servant—10 pounds

Lodging for either—5 pounds

Brandy, English Spirits, or Virginia dram, per gallon—

160 pounds

Rum, per gallon—100 pounds

Cider or sherry, per gallon—25 pounds

That a Virginia toddy was made in 1670 as follows: water, very little; sugar, to taste; rum, mostly; nutmeg, a dash; mint, enough to bury one's nose in.

That the first houses at Jamestown Island were made of planks sawn from green logs. These soon warped and were replaced with logs which soon came to be known as Virginia houses. Also the cloth used by the early housewives for bed linen and for making clothing came to be known as Virginia Cloth.

That a large southern plantation would have among the slaves, men or women who were carpenters, coopers, sawyers, blacksmiths, tanners, curriers, shoemakers, spinners, weavers, knitters, distillers, often millers, and when the estate was on the water, boat builders.

WANTED TO BUY, SELL OR TRADE

From Ohio comes an offer of a set of cabinetmaker's tools in original chest. Many of these are made of rosewood, and date from about 1870. He also offers a dough trough made about 1710. Will send his address to anyone interested.

A member has a collection of forty early American wind musical instruments. Will be sold as a lot for \$2,300.00, or separately. Most all in playable condition.

A correspondent writes he has a large collection of early firearms—many flint-locks—he will sell for \$330.00.

A member has an ox shoeing frame for sale at somewhere near a hundred dollars. Here is a showy article at a reasonable price.

For sale—An early type of home corn or flour mill, dating about 1800. This consists of two mill stones about twenty inches in diameter set in a frame about two feet high by twenty inches square. It was operated by one person with a stick hung from the ceiling.

For sale by a member—Two large grain chests, 21 inches by 26 inches by 14 feet 6 inches. These are of rough boards, were made to hold the family grain store.

Wanted, at a very reasonable price, an early American three cornered hat; also a set of those old-time teeth extractors in chamois bag; also candle bracket used on an old time cobbler's bench.

Several of our members are open to purchase, at a reasonable price, any book, magazine, paper or print dealing with early American tools or implements.

Mr. S. E. Gage, Flushing, N. Y., wants a long bladed axe used for cutting the box in long leaf pine in the turpentine industry.

W. B. Sprague, 43 Cedar St., New York City, collects farming and trade tools, and is especially interested in tools of the unusual and lesser known trades. He has a printed circular describing his wants in detail, which he will mail to anyone on request. He has, for exchange or sale, some 200 duplicates, and articles not in his line, and will be glad to give details to anyone who will indicate what line he is interested in.

A member is interested in books and prints of the various trades, crafts and guilds. He is also interested in the tools of the early glassblowers and in hand-made paper and the tools used in its making.

Wanted, books, magazines, papers, pictures, prints, etc. on any of the trades. Also photographs of exteriors and interiors of old shops and also catalogs of all kinds of tools used before 1860. S. C. Wolcott, Nuttall, Va.

Where no name is given, please write to the Secretary, giving full description and lowest price.

